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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09 855,493	05 16 2001	Takahiro Horiguchi	208544US2	9447

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EXAMINER

KACKAR, RAM N

ART UNIT	PAPER NUMBER
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1763

DATE MAILED: 08/01/2002

3

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/855,493

Applicant(s)

HORIGUCHI ET AL.

Examiner

Ram N Kackar

Art Unit

1763

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 5/16/2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-4 and 6-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoichi Deguchi et al. (US 5665167) in view of Nobuhiro Shinohara (US 5612144). Yoichi et al disclose a plasma processing apparatus (Fig 1) having a work table configured to support a substrate (42), having an insulating surface (42), means for process gas (Fig 4-208), an exhaust system (236) and a conduction structure configured to conduct static electricity generated on the work table to a grounded portion outside the process chamber (Fig 2A-70 and 2B). Yoichi et al do not disclose the conductive structure to be a conductive film on the worktable. Nobuhiro et al disclose materials and processes for removing electrification (static). Specifically they disclose a vacuum chuck (Fig 2), a ceramic layer of electric conductive property being used to remove electrification (static) (Col 1 line 23-26), higher resistance ceramic over high electric conductivity material connected to ground (Col 2 line 55-61), conductive ceramic like silicon carbide (Col 1 line 49) and conductive layer formed by vapor deposition (Col 7 line 48), or thermal spraying (Col 8 line 47). Therefore it would have been obvious to one having ordinary skill in the art at the time invention was made to provide for a conductive layer on the susceptor and pedestal connected together and connected to ground so as to inhibit build up of charge on these surfaces.

3. Regarding claims 6-9 It would have been obvious to provide means to remove static from all the surfaces exposed to the environment of charge and thus it would have been obvious to one having ordinary skill in the art at the time invention was made to provide for conductive layer on all the surfaces of the susceptor including pedestal and connected them to each other and ground.

4. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yoichi Deguchi et al. (US 5665167) in view of Nobuhiro Shinohara (US 5612144) as applied to claim 1 and further in view of Frankel (US 6106630). Yoichi et al or Nobuhiro do not disclose the conductive layer (Fig 8A-500) thickness to be in the range of 20 to 100 micron. Frankel discloses a susceptor having a conductive coating of 50 – 750 micron (abstract). Therefore it would have been obvious to one having ordinary skill in the art at the time invention was made to have a coating thickness which would neither peel off, if too thick nor inadequate to conduct charge to ground if too thin.

5. Claims 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoichi Deguchi et al. (US 5665167) and Nobuhiro Shinohara (US 5612144) as applied to claim 9 and further in view of Signer (US 5948224). Yoichi et al do not disclose connecting a positive bias to conductive film. Signer discloses charge carriers being neutralized intermittently (Col 5 line 32-35) which would mean connecting a bias instead of ground. It would have been obvious to one having ordinary skill in the art at the time invention was made to connect positive bias, preferably through a switch for flexibility, to expedite the discharge process.

6. Claims 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoichi Deguchi et al. (US 5665167), Nobuhiro Shinohara (US 5612144) and Signer (US 5948224) as

Art Unit: 1763

applied to claim 11 and further in view of Suzuki Shinji (JP 05198498). Yoichi et al do not disclose a window for admitting UV rays on an oxidizing gas like ozone. Suzuki Shinji discloses a treating chamber (Fig 1) with a window (40), UV lamp (45) and oxidizing gas Ozone (Abstract). It would have been obvious to one having ordinary skill in the art at the time invention was made to provide for UV rays and Ozone for oxidation because it would be possible to take care of charged particles by coating susceptor with conductive layer.

7. Claims 15-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoichi Deguchi et al. (US 5665167) in view of Nobuhiro Shinohara (US 5612144) as discussed above for claims 1-4 and 6-9 and further in view of Suzuki Shinji (JP 05198498). Yoichi et al and Nobuhiro et al disclose all the limitations of these claims except they do not disclose a window for admitting UV rays on an oxidizing gas. Suzuki Shinji discloses a treating chamber (Fig 1) with a window (40), UV lamp (45) and oxidizing gas Ozone (Abstract). Therefore as discussed in previous paragraph, it would have been obvious to one having ordinary skill in the art at the time invention was made to provide for UV rays and Ozone for oxidation because it would be possible to take care of charged particles by coating susceptor with conductive layer.

8. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yoichi Deguchi et al. (US 5665167), Nobuhiro Shinohara (US 5612144) and Suzuki Shinji (JP 05198498) as applied to claim 19 and further in view of Signer (US 5948224). Yoichi et al do not disclose connecting a positive bias to conductive film. Signer discloses charge carriers being neutralized intermittently (Col 5 line 32-35), which would mean connecting a bias instead of ground. It would have been obvious to one having ordinary skill in the art at the time invention was made

Art Unit: 1763

to connect positive bias, preferably through a switch for flexibility, to expedite the discharge process.

Conclusion

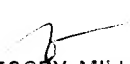
9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Japanese patents 20011240973, 60000729 and 02043731.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ram N Kackar whose telephone number is 703 305 3996. The examiner can normally be reached on M-F 8:00 A.M to 5:P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Mills can be reached on 703 308 1633. The fax phone numbers for the organization where this application or proceeding is assigned are 703 872 9310 for regular communications and 703 872 9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308 0661.

July 25, 2002


GREGORY MILLS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700